John E. Beauzile

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Justin T. Green Kreindler & Kreindler, LLP 750 Third Avenue New York, NY 10017

Re: Update of Analysis of Economic Loss in the Matter of

The Estate of Ms. Christina Sunga Ryook

January 2, 2018

Dear Mr. Green,

You have asked me to update the present value numbers in the analysis of the likely economic loss award from the September 11<sup>th</sup> Victim Compensation Fund prepared by **The Fund** dated **November 25, 2002**. I have used their assumptions for wages, benefits, taxes, personal consumption, replacement services, and discount rate to estimate those values and bring them to the present. The valuation date chosen is **January 1, 2018**.

In preparing this update, the only document reviewed is **The Fund**'s report. This update assumes the reader is familiar with the methodology used and assumptions made by **The Fund** and, therefore, they will not be restated here.

The update of **The Fund**'s analysis is summarized in four (4) sets of Exhibits.

- Exhibit 1 provides the summary of Lost Earnings, Retirement Benefits, and Lost of Replacement Services;
- The set of *Exhibits* 2s shows the details behind the loss of earnings numbers;
- The Exhibit 3 set provides supporting documentation for Retirement Benefits;
- The loss of Replacement Services amounts are in *Exhibits 4*s.

I believe that my agency, Robert Half Legal, has already provided you with a copy of my curriculum vitae. If not, feel free to contact them.

Sincerely,

VALUATION DATE	01-Jan-18
DISCOUNT RATE	4.2%

## EXHIBIT 1. SUMMARY OF ECONOMIC DAMAGES Ms. Christina Sunga Ryook

	PRESENT VALUE
Present Value of Lost Earnings	\$1,373,727
Present Value of Retirement Benefits	50,258
Present Value of Lost Replacement Services	574,171
Total	\$1,998,156

Base Salary	Unempl.	Tax Rate	Benefits	Pers. Consump.
45,835	3.0%	14.720%	3,896	62.644%

## EXHIBIT 2A. PRESENT VALUE OF LOST EARNINGS MS. CHRISTINA SUNGA RYOOK SPECIAL MASTER WORKLIFE

YEAR	AGE	TIME FRAME	AGE- SPECIFIC GROWTH FACTOR	EARNINGS	BENEFITS	UNEMPL. ADJ.	TAXES	CONSUMPTION	NET EARNINGS	PV OF NET EARNINGS
2001	26	0.31	1.00000	\$14,053	\$1,195	\$0	(\$2,069)	(\$7,508)	\$5,672	\$5,672
2002	27	1.31	1.08021	49,511	4,209	0	(7,288)	(26,450)	19,982	19,982
2003	28	2.31	1.07816	53,381	4,538	(1,482)	(7,622)	(27,662)	21,153	21,153
2004	29	3.31	1.07611	57,444	4,883	(1,595)	(8,202)	(29,768)	22,763	22,763
2005	30	4.31	1.07406	61,698	5,245	(1,713)	(8,810)	(31,972)	24,449	24,449
2006	31	5.31	1.07201	66,141	5,623	(1,836)	(9,444)	(34,274)	26,209	26,209
2007	32	6.31	1.06997	70,769	6,016	(1,964)	(10,105)	(36,673)	28,043	28,043
2008	33	7.31	1.06794	75,577	6,425	(2,098)	(10,791)	(39,164)	29,949	29,949
2009	34	8.31	1.06591	80,559	6,848	(2,236)	(11,502)	(41,746)	31,922	31,922
2010	35	9.31	1.06388	85,705	7,286	(2,379)	(12,237)	(44,412)	33,962	33,962
2011	36	10.31	1.06185	91,005	7,736	(2,526)	(12,994)	(47,159)	36,062	36,062
2012	37	11.31	1.05983	96,450	8,199	(2,677)	(13,772)	(49,981)	38,220	38,220
2013	38	12.31	1.05781	102,026	8,673	(2,832)	(14,568)	(52,870)	40,429	40,429
2014	39	13.31	1.05580	107,719	9,157	(2,990)	(15,381)	(55,820)	42,685	42,685
2015	40	14.31	1.05379	113,513	9,650	(3,151)	(16,208)	(58,823)	44,981	44,981
2016	41	15.31	1.05179	119,392	10,149	(3,314)	(17,047)	(61,869)	47,311	47,311
2017	42	16.31	1.04979	125,337	10,655	(3,479)	(17,896)	(64,950)	49,666	49,666
2018	43	17.31	1.04779	131,327	11,164	(3,645)	(18,751)	(68,054)	52,040	50,897
2019	44	18.31	1.04579	137,340	11,675	(3,812)	(19,610)	(71,170)	54,423	51,082
2020	45	19.31	1.04380	143,356	12,186	(3,979)	(20,469)	(74,287)	56,807	51,170
2021	46	20.31	1.04182	149,351	12,696	(4,146)	(21,325)	(77,394)	59,182	51,161
2022	47	21.31	1.03984	155,301	13,202	(4,311)	(22,174)	(80,477)	61,540	51,055
2023	48	22.31	1.03786	161,181	13,702	(4,474)	(23,014)	(83,524)	63,870	50,852
2024	49	23.31	1.03588	166,964	14,193	(4,635)	(23,840)	(86,521)	66,162	50,554
2025	50	24.31	1.03391	172,625	14,674	(4,792)	(24,648)	(89,455)	68,405	50,161
2026	51	25.31	1.03194	178,139	15,143	(4,945)	(25,435)	(92,312)	70,590	49,677
2027	52	26.31	1.03000	183,483	15,597	(5,093)	(26,198)	(95,081)	72,708	49,105
2028	53	27.31	1.03000	188,988	16,065	(5,246)	(26,984)	(97,934)	74,889	48,539
2029	54	28.31	1.03000	194,657	16,547	(5,403)	(27,794)	(100,872)	77,136	47,980
2030	55	29.31	1.03000	200,497	17,044	(5,566)	(28,628)	(103,898)	79,450	47,428
2031	56	30.31	1.03000	206,512	17,555	(5,733)	(29,487)	(107,015)	81,833	46,881
2032	57	31.31	1.03000	212,707	18,082	(5,905)	(30,371)	(110,225)	84,288	46,342
2033	58	32.31	1.03000	219,089	18,624	(6,082)	(31,282)	(113,532)	86,817	45,808
2034	59	33.22	1.03000	206,856	17,584	(5,742)	(29,536)	(107,193)	81,970	41,578
Total				\$4,378,655	\$372,220	(\$119,782)	(\$625,483)	(\$2,270,043)	\$1,735,567	\$1,373,727

## Notes

 $<sup>(1)</sup> Assumptions can be found in 'Assumptions' and 'After-tax Projections' tabs in Excel file in ... \\ \textbf{Valuation Valuation Models } ... \\$ 

<sup>(2)</sup> Unemployment adjustment after 2002.

Unempl.	Tax Rate	Pers. Cons.	Pension Contrib. Rate	401(k) Contrib. Rate
3.0%	14.720%	62.644%	4.000%	0.000%

## **EXHIBIT 3A.** PRESENT VALUE OF LOST PENSION BENEFITS MS. CHRISTINA SUNGA RYOOK SPECIAL MASTER WORKLIFE

YEAR	AGE	TIME FRAME	PENSION	401(K)	Taxes	CONSUMPTION	NET LOSS	PV of NET Loss
2001	26	0.31	\$562	\$0	\$0	(\$352)	\$210	\$210
2002	27	1.31	1,980	0	0	(1,241)	740	740
2003	28	2.31	2,071	0	0	(1,297)	774	774
2004	29	3.31	2,229	0	0	(1,396)	833	833
2005	30	4.31	2,394	0	0	(1,500)	894	894
2006	31	5.31	2,566	0	0	(1,608)	959	959
2007	32	6.31	2,746	0	0	(1,720)	1,026	1,026
2008	33	7.31	2,932	0	0	(1,837)	1,095	1,095
2009	34	8.31	3,126	0	0	(1,958)	1,168	1,168
2010	35	9.31	3,325	0	0	(2,083)	1,242	1,242
2011	36	10.31	3,531	0	0	(2,212)	1,319	1,319
2012	37	11.31	3,742	0	0	(2,344)	1,398	1,398
2013	38	12.31	3,959	0	0	(2,480)	1,479	1,479
2014	39	13.31	4,180	0	0	(2,618)	1,561	1,561
2015	40	14.31	4,404	0	0	(2,759)	1,645	1,645
2016	41	15.31	4,632	0	0	(2,902)	1,730	1,730
2017	42	16.31	4,863	0	0	(3,046)	1,817	1,817
2018	43	17.31	5,095	0	0	(3,192)	1,903	1,862
2019	44	18.31	5,329	0	0	(3,338)	1,991	1,868
2020	45	19.31	5,562	0	0	(3,484)	2,078	1,872
2021	46	20.31	5,795	0	0	(3,630)	2,165	1,871
2022	47	21.31	6,026	0	0	(3,775)	2,251	1,867
2023	48	22.31	6,254	0	0	(3,918)	2,336	1,860
2024	49	23.31	6,478	0	0	(4,058)	2,420	1,849
2025	50	24.31	6,698	0	0	(4,196)	2,502	1,835
2026	51	25.31	6,912	0	0	(4,330)	2,582	1,817
2027	52	26.31	7,119	0	0	(4,460)	2,659	1,796
2028	53	27.31	7,333	0	0	(4,594)	2,739	1,775
2029	54	28.31	7,553	0	0	(4,731)	2,821	1,755
2030	55	29.31	7,779	0	0	(4,873)	2,906	1,735
2031	56	30.31	8,013	0	0	(5,019)	2,993	1,715
2032	57	31.31	8,253	0	0	(5,170)	3,083	1,695
2033	58	32.31	8,501	0	0	(5,325)	3,175	1,676
2034	59	33.22	8,026	0	0	(5,028)	2,998	1,521
Total		-	\$169,968	\$0	\$0	(\$106,475)	\$63,493	\$50,258

**EXHIBIT 4A.** LOSS ESTIMATED VALUE OF REPLACEMENT SERVICES

MS. CHRISTINA SUNGA RYOOK

YEAR	YEAR AGE TIME FRAME		HOUSEHOLD SERVICES	FAMILY CARE SVCS	TOTAL SERVICES	PRESENT VALUE
2001	26	0.31	\$3,970	\$337	\$4,307	\$4,307
2002	27	1.31	13,335	1,133	14,468	14,468
2003	28	2.31	13,736	1,167	14,902	14,902
2004	29	3.31	14,148	1,202	15,349	15,349
2005	30	4.31	14,572	1,238	15,810	15,810
2006	31	5.31	15,009	1,275	16,284	16,284
2007	32	6.31	15,459	1,313	16,773	16,773
2008	33	7.31	15,923	1,353	17,276	17,276
2009	34	8.31	16,401	1,393	17,794	17,794
2010	35	9.31	16,893	1,435	18,328	18,328
2011	36	10.31	17,400	1,478	18,878	18,878
2012	37	11.31	17,922	1,522	19,444	19,444
2013	38	12.31	18,459	1,568	20,027	20,027
2014	39	13.31	19,013	1,615	20,628	20,628
2015	40	14.31	19,584	1,664	21,247	21,247
2016	41	15.31	20,171	1,713	21,885	21,885
2017	42	16.31	20,776	1,765	22,541	22,541
2018	43	17.31	21,400	1,818	23,217	22,637
2019	44	18.31	22,042	1,872	23,914	22,248
2020	45	19.31	22,703	1,928	24,631	21,866
2021	46	20.31	23,384	1,986	25,370	21,491
2022	47	21.31	24,085	2,046	26,131	21,122
2023	48	22.31	24,808	2,107	26,915	20,759
2024	49	23.31	25,552	2,171	27,723	20,402
2025	50	24.31	26,319	2,236	28,554	20,052
2026	51	25.31	27,108	2,303	29,411	19,707
2027	52	26.31	27,922	2,372	30,293	19,369
2028	53	27.31	28,759	2,443	31,202	19,036
2029	54	28.31	29,622	2,516	32,138	18,709
2030	55	29.31	30,511	2,592	33,102	18,388
2031	56	29.99	21,476	1,824	23,301	12,442
Total		_	\$628,461	\$53 <i>,</i> 384	\$681,846	\$574,171

**Notes:** (1) Assumptions can be found in 'PRINT Replacement Summary' tab in Excel file in ...\Valuation\ValuationModels\...

<sup>(2)</sup> The annual growth rate for replacement services is 3%.

<sup>(3)</sup> Discount rate is 4.8%